

Appl. No. 10/661,736
Arndt, Dated Mar. 22, 2005
Reply to Office Action of January 7, 2005

REMARKS

By the above amendments, applicant has canceled claims 11-12 without prejudice. New claims 15-17 have been added.

Claim Rejections Under 35 U.S.C. 102

Claims 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita (US 6,309,079 B1).

Amended claim 10 recites "A backlight system comprising: a light guide plate defining a plurality of side faces, opposite bottom and exit faces, and a plurality of incident faces, said side faces commonly defining a periphery of said light guide plate, said incident faces being at each of corners of said light guide plate; and a plurality of point light sources essentially uniformly dispersed along said periphery and located at said corners, said point light sources commonly directing toward a center region of said light guide plate."

In summary, Examiner states that Yamashita teaches forming a backlight system comprising all the limitations recited in claim 10 (Figs. 10 and 13).

Applicant respectfully traverses the rejection as to claim 10 as follows:

In Yamashita, the four light sources 102 are positioned in the vicinity of four corners of the display surface of the non-luminescent display device 101 and outside of the display area of the non-luminescent display device 101 so that no parts of the light sources 102 cover the display area (column 12, lines 15-20, and

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Figs. 10 and 13).

However, the position for dispersing point light sources to which amended claim 10 of the present invention is directed is along the periphery defined by the side faces and located at the corners of the light guide plate. In other words, the positions of the arranged light sources in Yamashita are different from the positions of the light sources to which amended claim 10 of the present invention is directed. This difference demonstrates that Yamashita does not teach forming a backlight system comprising all limitations recited in amended claim 10.

In addition, Yamashita teaches that a non-luminescent display system has a non-luminescent display device having a display surface having a display area, and that light sources are positioned outside of the display area, so that no parts of the light sources cover the display area. This feature and its motivating purpose are different from the present invention, in which point light sources are arranged along the periphery defined by the side faces and located at the corners with the incident faces, so as to ensure that the backlight system emits light with a high degree of uniformity.

In summary, there is nothing in the cited reference that teaches or suggests to one of ordinary skill in the art that they might or should provide the backlight system of amended claim 10. Furthermore, the backlight system as recited in amended claim 10 produces new and unexpected results. That is, the backlight system emits light with a high degree of uniformity.

Accordingly, amended claim 10 is submitted to be novel, unobvious and patentable over Yamashita under both s.102(b) and s.103. Reconsideration and

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withdrawal of the rejection and allowance of amended claim 10 are respectfully requested.

Claim Rejections Under 35 U.S.C. 103

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita (US 6,309,079 B1) in view of Akahane (US 5,931,555).

Claim 1 recites that a backlight system comprises a light guide plate including a plurality of incident surfaces disposed at corners thereof... and a plurality of point light sources for emitting light beams disposed adjacent and opposite to the incident surfaces; wherein, the bottom surface comprises a scattering pattern having a plurality of dots thereon, and a covering rate of the scattering pattern varies such that a light distribution density of light emitted from the light guide plate is uniform.

In summary, Examiner states that Yamashita teaches forming a backlight system comprising all the limitations recited in claim 1 except for the light guide plate employed in the backlight system having a plurality of rectangular dots on a bottom surface thereof.

In response to the rejection as to claim 1, applicant respectfully traverses as follows:

In Yamashita, the four light sources 102 are positioned in the vicinity of four corners of the display surface of the non-luminescent display device 101 and outside of the display area of the non-luminescent display device 101, so that no

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parts of the light sources 102 cover the display area (column 12, lines 15-20, and Figs. 10 and 13).

However, positions for arranging the light sources to which claim 1 is directed are adjacent and opposite to the incident surfaces disposed at the corners of the light guide plate. In other words, the positions of the arranged light sources in Yamashita are different from the positions of the light sources to which claim 1 is directed. This difference demonstrates that Yamashita does not teach forming a backlight system comprising all the limitations recited in claim 1 other than the rectangular dots on the bottom surface.

Moreover, Yamashita teaches that a non-luminescent display system has a non-luminescent display device having a display surface having a display area, and that light sources are positioned outside of the display area, so that no parts of the light sources cover the display area. This feature and its motivating purpose are different from the present invention, in which the light sources are adjacent and opposite to the incident surfaces disposed at the corners of the light guide plate so as to ensure that the backlight system emits light with a high degree of uniformity.

In addition, the purported combination of Yamashita with Akahane is submitted to be improper, because each reference is individually complete and fully functional in itself. The light sources of Yamashita are positioned in the vicinity of four corners of the display surface and outside of the display area thereof, so that no parts of the light sources cover the display area. On the other hand, Akahane teaches a background lighting apparatus having diffusion patterns which achieves a high level of brightness. There would have been no motivation

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or reason to modify the Yamashita non-luminescent display device by taking the diffusion patterns used for elongated light sources that are taught by Akahane. Thus, one skilled in the art would have had no motivation or reason to make such a combination.

In summary, there is nothing in the cited references that teaches or suggests to one of ordinary skill in the art that they might or should be combined to provide the backlight system of claim 1. Furthermore, the backlight system of claim 1 produces new and unexpected results. That is, the backlight system emits light with a high degree of uniformity.

Accordingly, claim 1 is submitted to be unobvious and patentable over Yamashita in view of Akahane. Reconsideration and withdrawal of the rejection and allowance of claim 1 are respectfully requested.

Claims 2-6 all depend directly or indirectly from claim 1, and therefore should also be allowable.

Amended claim 7 recites that “a liquid crystal display [comprises] a liquid crystal panel; and a backlight including: a light guide plate having a plurality of incident surfaces disposed at corners thereof...and a plurality of point light sources disposed adjacent and opposite to the incident surfaces for emitting light beams...”

Applicant respectfully traverses the rejection as to claim 7 as follows:

For reasons similar to those asserted above in relation to claim 1, applicant contends that Yamashita and Akahane do not teach or suggest to one of ordinary

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skill in the art that they might or should be combined to provide the liquid crystal display of claim 7.

Accordingly, amended claim 7 is submitted to be unobvious and patentable over Yamashita in view of Akahane. Reconsideration and withdrawal of the rejection and allowance of claim 7 are respectfully requested.

Amended claims 8 and claim 9 depend directly from claim 7, and therefore should also be allowable.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita.

Applicant respectfully traverses the rejection as to claims 13-14 as follows:

Claims 13-14 respectively depend directly and indirectly from amended claim 10, and thus comprise all the limitations recited in amended claim 10. For reasons similar to those asserted above in relation to amended claim 10, applicant contends that Yamashita does not teach or suggest to one of ordinary skill in the art that they might or should provide the backlight system of claims 13-14.

Accordingly, claims 13-14 are submitted to be unobvious and patentable over Yamashita. Reconsideration and withdrawal of the rejection and allowance of claims 13-14 are respectfully requested.

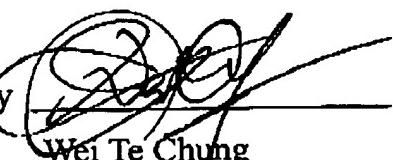
New claims 15-17 have been added. In view of the above remarks, these new claims are believed to be patentable and in a condition for allowance.

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In view of the foregoing, the present application as claimed in the pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,

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